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Japanese spiders of the genus *Stertinius* (Araneae: Salticidae)

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Abstract —At present, only one *Stertinius* species, *S. kumadai* Logunov, Ikeda & Ono 1997, is known from Japan. In this paper, a new species, *S. ryukyuensis* sp. nov., is described and compared with *S. kumadai*, which is redescribed. Despite similarities in general appearance, the two species can be separated based on the morphology of retrolateral tibial apophysis and male cheliceral teeth, as well as the position of large spermathecal chamber.

Key words — new species, taxonomy

The salticid spider genus *Stertinius* Simon 1890 currently contains twelve species that are distributed in Southeast Asia and Japan (WSC 2020). Of these, only *S. kumadai* Logunov, Ikeda & Ono 1997 is currently known from Japan.

Upon examining spider materials obtained from the Ryukyu Islands, Japan, I recognized an undescribed member of this genus. This species is described as new in this paper. In addition, both sexes of *S. kumadai* are redescribed here, since the male of this species has been figured only in a Japanese illustrated book without detailed description (Ono, Ikeda & Kono 2009).

Specimens were preserved in 80% ethanol, and their morphological features were observed under a stereomicroscope, Leica M125C. Type series are deposited in the collection of the Department of Zoology, National Museum of Nature and Science, Tokyo.

The following abbreviations are used: ALE, anterior lateral eye; AME, anterior median eye; PLE, posterior lateral eye; PME, posterior median eye; RTA, retrolateral tibial apophysis.

All measurements are given in millimeters. Leg measurements are given in the following format: [femur + patella + tibia + metatarsus + tarsus = total].

Genus *Stertinius* Simon 1890
[Japanese name: Minamitsuya-haetorigumo-zoku]

Stertinius Simon 1890, p. 135 (type species: *Stertinius dentichelis* Simon 1890, from Guam Is., Mariana Isls.).

Remarks. As noted by Logunov et al. (1997) and Prószyński & Deeleman-Reinhold (2013), the genus is still somewhat poorly defined as the type species *S. dentichelis* is not well known.

Stertinius ryukyuensis sp. nov.
[Japanese name: Ryûkyû-minamitsuya-haetori]
(Figs. 1–2, 5–6, 9–12)

Type materials. All materials were collected in Amami-shi, Amami-Ôshima Is., Kagoshima Pref., Japan. Holotype: ♂, Chinase, Naze, 10-IV-2015, T. Suguro leg. Paratypes: 1 ♀, same locality as the holotype, 13-III-2014, N. Naya & T. Suguro leg.; 1 ♀, same locality, 20-X-2014, T. Suguro leg.; 1 ♂, same locality, 10-IV-2015, T. Suguro leg.; 1 ♂ 1 ♀, Koshuku, Naze, 12-III-2014, T. Suguro leg.; 1 ♂, Kamiya, Sumiyô-chô, 23-III-2016, T. Suguro leg.

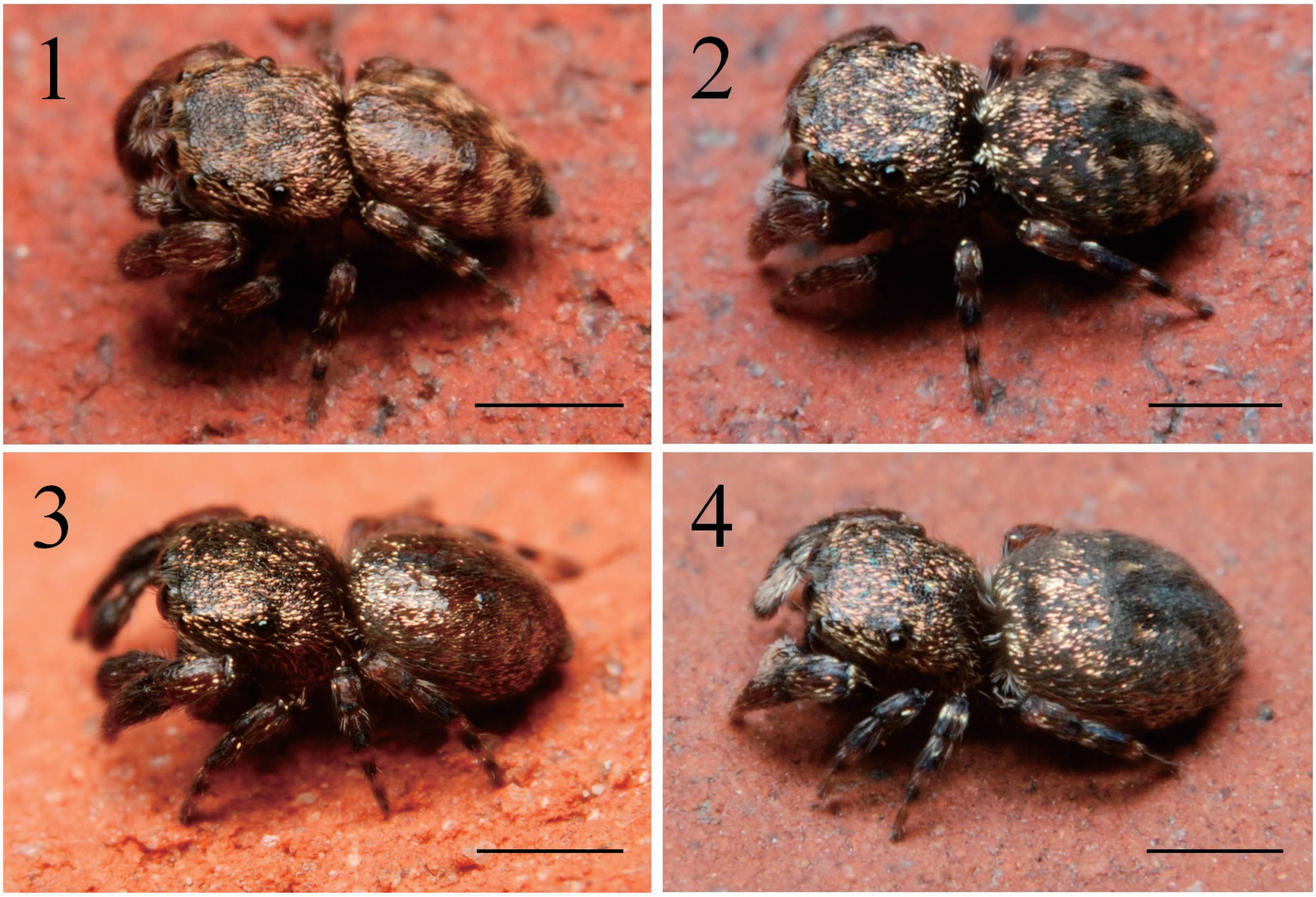
Other specimens examined. All specimens were collected in Kagoshima Pref., Japan. Amami-Ôshima Is.: 2 ♂, Ura, Tatsugô-chô, 26-III-2016, T. Suguro leg.; 1 ♀, Uragami, Naze, Amami-shi, 26-III-2016, T. Suguro leg.; 1 ♂ 4 ♀, Koshuku, Naze, 12-III-2014, N. Naya & T. Suguro leg.; 1 ♂, Chinase, Naze, Amami-shi, 11-III-2014, T. Suguro leg.; 2 ♀, same locality, 13-III-2014, N. Naya & T. Suguro leg.; 1 ♀, same locality, 20-X-2014, T. Suguro leg.; 1 ♀, Kominato, Naze, 23-III-2016, T. Suguro leg.; 1 ♂ 1 ♀, Mt, Yuwandake, Yamato-son, 21-III-2017, T. Suguro leg. Tokunoshima Is.: 1 ♀, Todoroki, Tokunoshima-chô, 27-III-2018, T. Suguro leg.

Diagnosis. Among congeners, this species can be separated by the following characteristics. Male palpal tibia is short. Male chelicera is less developed and with a large singular retromarginal tooth. Female epigyne lacks bell-shaped cavity on the middle.

This species closely resembles another Japanese species *S. kumadai* Logunov, Ikeda & Ono 1997 particularly, but can be distinguished from the latter by the following characteristics. Male palpal RTA is small and with apex projecting anteriorly, whereas it is stout with apex projecting dorsally in *S. kumadai*. Embolus is 1.5 times shorter than in *S. kumadai*. Copulatory duct is dorso-ventrally overlapping large cham-

Table 1. Spination of legs of *Stertinius ryukyuensis* sp. nov. (dorsal / ventral; n = no spine).

Leg		Femur	Patella	Tibia	Metatarsus
I	♂	1-1-1p / n	n / n	n / 1-2	n / 2-2
	♀	n / n	n / n	n / 1-2	n / 2-2
II	♂	1-1,1p / n	n / n	n / 1	n / 1
	♀	n / n	n / n	n / 1	n / 1
III	♂	1-1 / n	n / n	n / n	n / n
	♀	n / n	n / n	n / n	n / n
IV	♂	1-1 / n	n / n	n / n	n / 1p
	♀	n / n	n / n	n / n	n / n



Figs. 1–4. Habitus. 1–2, *Stertinius ryukyuensis* sp. nov. (1, male holotype; 2, female paratype from Chinase). 3–4, *Stertinius kumadai* Logunov, Ikeda & Ono 1997 (3, male from Tokyo; 4, female from Nara Pref.). Scales = 1.0 mm.

ber of spermatheca, while in *S. kumadai* it is not overlapping spermatheca. Small chamber of spermatheca is located posteriorly to epigastric furrow, whereas it is located anteriorly to epigastric furrow in *S. kumadai*.

Description. Based on ♂ holotype / 1 ♀ paratype from Chinase, Amami-Ôshima Is. Measurements. Body 2.86 / 3.00 long; carapace 1.42 / 1.26 long; 1.18 / 1.02 wide; 0.62 / 0.56 high; abdomen 1.44 / 1.74 long; 1.10 / 1.26 wide. Eye field: eye row I 0.96 / 0.88 wide; eye row II 0.98 / 0.90 wide; eye row III 1.12 / 1.00 wide; eye row 0.69 / 0.61 long; distance between eye row I and II / length of eye row 0.45 / 0.43; width of eye row I / width of eye row III 0.86 / 0.88;

AME diameter 0.28 / 0.25; ALE / AME 0.50 / 0.52; ALE / PLE 1.00 / 0.93; PME / PLE 0.36 / 0.36. Length of legs: I 0.76 + 0.56 + 0.49 + 0.31 + 0.25 = 2.38 / 0.64 + 0.40 + 0.34 + 0.25 + 0.19 = 1.81; II 0.59 + 0.38 + 0.34 + 0.28 + 0.24 = 1.81 / 0.50 + 0.29 + 0.26 + 0.23 + 0.20 = 1.48; III 0.55 + 0.29 + 0.29 + 0.29 + 0.25 = 1.66 / 0.40 + 0.26 + 0.24 + 0.24 + 0.23 = 1.36; IV 0.73 + 0.36 + 0.38 + 0.34 + 0.25 = 2.05 / 0.66 + 0.33 + 0.35 + 0.30 + 0.24 = 1.88.

Variation among specimens examined. Body 2.50–3.00 / 2.52–3.02 long; carapace 1.24–1.44 / 1.14–1.34 long; 1.02–1.20 / 0.96–1.08 wide; abdomen 1.26–1.56 / 1.38–1.78 long; 1.00–1.20 / 1.00–1.28 wide.

Carapace rather flat, height / width 0.53 / 0.55. Clypeus very low, clypeal height / AME diameter 0.11 / 0.08. Chelicera with a singular promarginal and large retromarginal tooth in male (Fig. 5), but two promarginal and one bifurcate retromarginal teeth in female (Fig. 6). Spination of legs as shown in Table 1. Dorsum of abdomen with three pairs of longitudinally arranged sigilla, and only in male somewhat sclerotized and lustrous.

Palp (Figs. 9, 10). Embolus thin, approximately half length of bulb. Bulb oblong. Cymbium shallowly recessed on retrolateral corner. Tibia short. RTA small, translucent and projecting anteriorly.

Female genitalia (Figs. 11, 12). Epigyne with short transverse fold and small openings located just above fold. Spermathecae consisting of large anterior bean-shaped chamber and small globose posterior chamber, visible through epigynal surface. Copulatory duct dorso-ventrally overlapping anterior chamber. Posterior chamber located posteriorly to epigastric furrow.

Coloration and markings (Figs. 1, 2). Male and female subequal. Carapace mostly reddish brown, covered by long sparse white and brown hairs, and bearing iridescent pale yellow pinnate hairs. Lateral surface of carapace bearing white iridescent pinnate hairs, and covered anteriorly by long white hairs. Eye field somewhat darker. Periphery of eyes blackish brown. Clypeus dark reddish brown, with several pale yellow hairs. Chelicera, labium and maxilla brown. Sternum greyish brown, covered by long sparse hairs. Dorsum of abdomen greyish brown, covered by short sparse dark brown hairs and relatively dense white iridescent pinnate hairs, bearing several pairs of yellowish brown markings, and anteriorly covered by long white and greyish brown hairs. Spinnerets greyish brown. Venter of abdomen dark greyish brown, with two pairs of yellowish white longitudinal stripes. Legs mostly light brown, covered by sparse white and greyish brown hairs, and bearing slight pinnate hairs. Femora I–IV, tibia I, and distal end of patellae II–IV, tibiae II–IV and metatarsi I–IV dark colored. Palp covered by iridescent white pinnate hairs on femur, patella and tibia. In male, cymbium covered by greyish brown hairs. In female, tarsus covered by pinnate hairs on proximal half, whereas dark colored and densely covered by greyish brown hairs on distal half.

Distribution. Japan (Amami-Ôshima & Tokunoshima Isls.). Specimens were collected from tree trunk.

Remarks. Males and females are considered to be conspecific because they were collected together, and no other candidates were collected from the type locality and nearby area.

Though this genus has a problem of generic definition, given the apparently close taxonomic affinity of the new species to *S. kumadai*, I have placed it in the same genus.

Etymology. The specific name is a Latin adjective, that refers to the Ryukyu Islands, where the new species is distributed.

Stertinius kumadai Logunov, Ikeda & Ono 1997
[Japanese name: Ko-minamitsuya-haetori]
(Figs. 3–4, 7–8, 13–16)

Stertinius kumadai Logunov, Ikeda & Ono 1997, p. 12, f. 21–23, 27–30 (♀ holotype from Tokyo, Japan; type specimen not examined); Ono, Ikeda & Kono 2009, p. 581, f. 242–247, ♂♀.

Specimens examined. All specimens were collected in Japan. 2 ♂ 6 ♀, Hikawa, Okutama-chô, Nishitama-gun, Tokyo, 31-VIII-2016, T. Suguro leg.; 1 ♀, Mt. Ogurayama, Midori-ku, Sagamihara-shi, Kanagawa Pref., 15-V-2014, S. Hatsushiba leg. 1 ♀, Kamikitayama-mura, Yoshino-gun, Nara Pref., 24-VI-2014, T. Shiozaki leg.

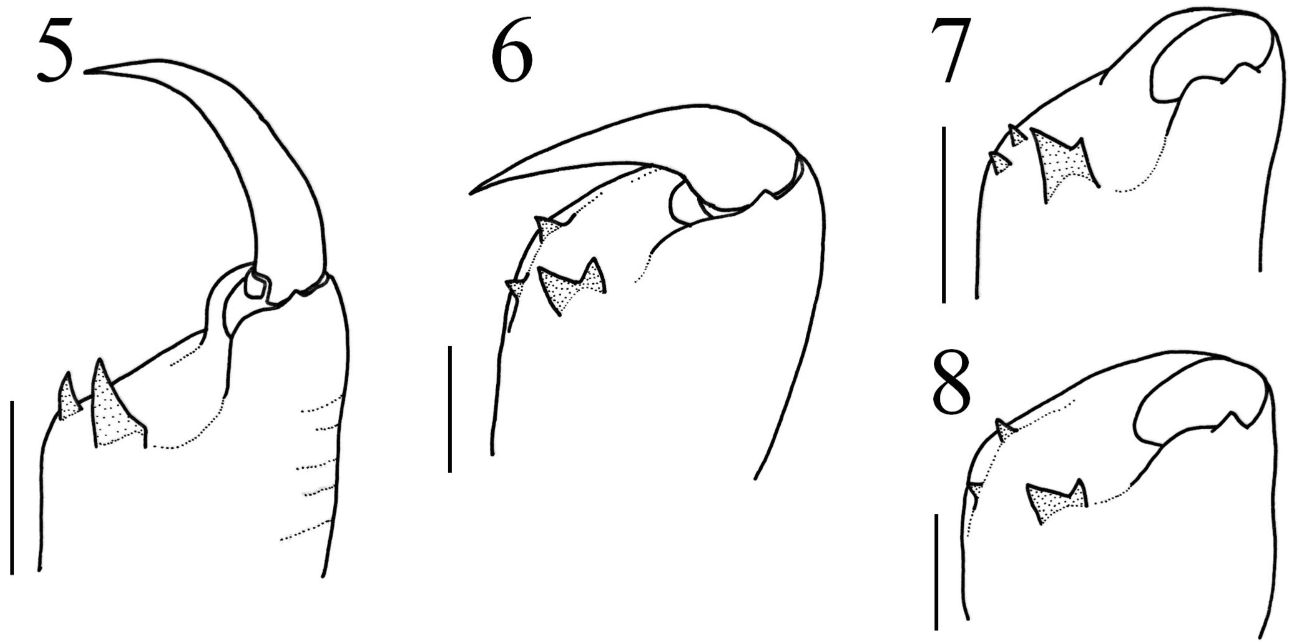
Diagnosis. For female, see the original desctiption (Logunov et al. 1997). Male of this species can be separated by short palpal tibia and less developed chelicera with a bicuspid retromarginal tooth which is not extremely large.

The closest species seems to be the previous species *S. ryukyuensis* sp. nov. See also the diagnosis of it.

Description. Based on 1 ♂ / 1 ♀ from Tokyo. Measurements. Body 2.84 / 3.00 long; carapace 1.34 / 1.28 long; 1.12 / 1.04 wide; 0.62 / 0.58 high; abdomen 1.50 / 1.72 long; 1.20 / 1.26 wide. Eye field: eye row I 0.92 / 0.88 wide; eye row II 0.96 / 0.94 wide; eye row III 1.06 / 1.02 wide; eye row 0.63 / 0.56 long; distance between eye row I and II / length of eye row 0.42 / 0.44; width of eye row I / width of eye row III 0.87 / 0.86; AME diameter 0.27 / 0.27; ALE / AME 0.48 / 0.48; ALE / PLE 1.00 / 1.00; PME / PLE 0.31 / 0.38. Length of legs: I 0.71 + 0.51 + 0.45 + 0.29 + 0.28 = 2.24 / 0.63 + 0.44 + 0.34 + 0.26 + 0.25 = 1.91; II 0.55 + 0.35 + 0.31 + 0.24 + 0.23 = 1.68 / 0.53 + 0.33 + 0.28 + 0.25 + 0.24 = 1.61; III 0.51 + 0.34 + 0.31 + 0.26 + 0.24 = 1.66 / 0.48 + 0.26 + 0.26 + 0.26 + 0.25 = 1.51; IV 0.65 + 0.35 + 0.36 + 0.34 + 0.28 = 1.98 / 0.54 + 0.36 + 0.39 + 0.33 + 0.28 = 1.89.

Variation among specimens examined. Body 2.84–2.90 / 2.68–3.28 long; carapace 1.34–1.34 / 1.24–1.40 long; 1.12–1.14 / 1.00–1.14 wide; abdomen 1.50–1.56 / 1.44–1.88 long; 1.18–1.20 / 1.02–1.88 wide.

Carapace rather flat, height / width 0.55 / 0.56. Clypeus very low, clypeal height / AME diameter 0.07 / 0.07. Chelicera with two small promarginal and one rather large bicuspid retromarginal teeth in male (Fig. 7), whereas with two promarginal and one bicuspid retromarginal teeth (Fig. 8).



Figs. 5–8. Left chelicera. 5–6, *Stertinius ryukyuensis* sp. nov. (5, male; 6, female). 7–8, *Stertinius kumadai* Logunov, Ikeda & Ono 1997 (7, male; 8, female). Scales = 0.2 mm (5, 7); 0.1 mm (6, 8).

Table 2. Spination of legs of *Stertinius kumadai* Logunov, Ikeda & Ono 1997 (dorsal / ventral; n = no spine).

Leg		Femur	Patella	Tibia	Metatarsus
I	♂	1-1-1p / n	n / n	n / 1	n / 2-2
	♀	n / n	n / n	n / 1-2	n / 2-2
II	♂	1,1p / n	n / n	n / n	n / n
	♀	n / n	n / n	n / 1	n / 1
III	♂	1,1p / n	n / n	n / n	n / n
	♀	n / n	n / n	n / n	n / n
IV	♂	1 / n	n / n	n / n	n / 1p
	♀	n / n	n / n	n / n	n / 1p

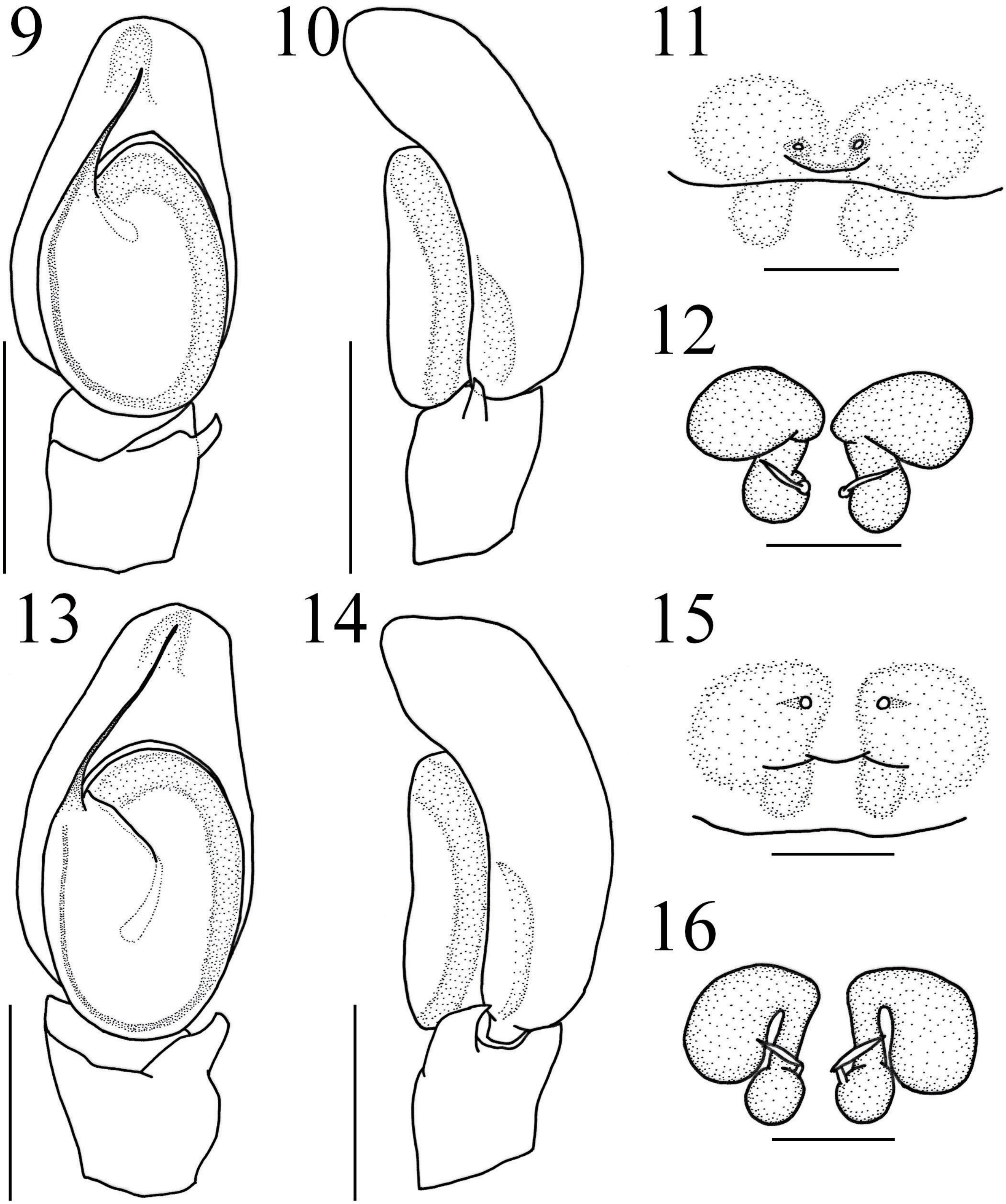
Spination of legs as shown in Table 2. Dorsum of abdomen with three pairs of longitudinally arranged sigilla, and only in male somewhat sclerotized and lustrous.

Palp (Figs. 13, 14). Embolus thin, approximately three-quarters length of bulb. Bulb oblong. Cymbium shallowly recessed on retrolateral base. Tibia short. RTA stout and projected dorsally.

Female genitalia (Figs. 15, 16). Epigyne with transverse fold and small openings. Spermathecae consisting of large anterior chamber and small posterior chamber, visible on epigynal surface. Copulatory duct not overlapping anterior chamber. Posterior chamber located anteriorly to epigastric furrow.

Coloration and markings (Figs. 3, 4). Male and female subequal, and similar to those of *S. ryukyuensis*. Iridescent pinnate hairs on carapace pale yellow even on lateral surface. Clypeus with long greyish brown hairs. Abdominal markings less distinct than in *S. ryukyuensis* both dorsally and ventrally. In male, palp covered by dark greyish hairs and lacking pinnate hairs on patella, tibia and cymbium.

Distribution. Japan (so far recorded from Honshu and Shikoku). Specimens were collected mainly from forests of Japanese cedar.



Figs. 9–16. Genitalia. 9–12, *Stertinius ryukyuensis* sp. nov. 13–16, *Stertinius kumadai* Logunov, Ikeda & Ono 1997. 9, 10, 13, 14, left male palp (9, 13, ventral view; 10, 14, retrolateral view); 11, 15, epigyne, ventral view; 12, 16, female internal genitalia, dorsal view. Scales = 0.2 mm (9, 10, 13, 14); 0.1 mm (11, 12, 15, 16).

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